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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,772	11/20/2003	Kazutaka Uchitomi	5271-0109PUS1	8376
2292 7590 03/09/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER RHEE, JANE J	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			NOTIFICATION DATE	
3 MONTHS			03/09/2007	
			DELIVERY MODE ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/09/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/717,772	<b>Applicant(s)</b> UCHITOMI ET AL.	
	<b>Examiner</b> Jane Rhee	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/20,2006,12/29/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/2006 has been entered.

***New Rejections******Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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2. Claims 1-45 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5,7-17 of copending Application No. 10181163. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the present and copending application claims a lithium-containing complex oxide represented by general formula  $\text{Li}_{1+x+\alpha}\text{Ni}_{(1-x-y+\delta)/2}\text{Mn}_{(1-x-y-\delta)/2}\text{M}_y\text{O}_2$  (where  $0 \leq x \leq 0.15$ ,  $-0.05 \leq x + \alpha \leq 0.2$ ,  $0 \leq y \leq 0.4$ ;  $-0.1 \leq \delta \leq 0.1$ ; and M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles, wherein the primary particles have a mean particle diameter of 0.3 to 3  $\mu\text{m}$  and the secondary particles have a mean particle diameter of 5 to 20  $\mu\text{m}$ .

3. Claims 1-45 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 18-39 of copending Application No. 11191742 in view of Inoue et al. (6555268).

Copending application 11191742 and present application claims a lithium-containing complex oxide represented by general formula  $\text{Li}_{1+x+\alpha}\text{Ni}_{(1-x-y+\delta)/2}\text{Mn}_{(1-x-y-\delta)/2}\text{M}_y\text{O}_2$  (where  $0 \leq x \leq 0.15$ ,  $-0.05 \leq x + \alpha \leq 0.2$ ,  $0 \leq y \leq 0.4$ ;  $-0.1 \leq \delta \leq 0.1$ ; and M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles, wherein the primary particles have a mean particle diameter of 0.3 to 3  $\mu\text{m}$  and the secondary particles have a mean particle diameter of 5 to 20  $\mu\text{m}$ .

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Present application fail to disclose a lithium containing complex oxide having a layered crystal structure. Inoue et al. teaches a lithium containing complex oxide having a layered crystal structure for the purpose of that the lithium ions may be reversibly intercalated and deintercalated (col. 1 lines 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide present application with a lithium containing complex oxide having a layered crystal structure in order that the lithium ions may be reversibly intercalated and deintercalated (col. 1 lines 27).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-18,20-42 are rejected under 35 U.S.C. 102(a) as being anticipated by Shiozaki et al. (WO 02086993, using EP1391950 as English translation).

As to claim 1,16 Shiozaki et al. discloses a non-aqueous secondary battery comprising a positive electrode comprising a lithium-containing complex oxide as an active material, a negative electrode and a non-aqueous electrolyte (pg 2 paragraph 0001) wherein the lithium-containing complex oxide represented by general formula

$\text{Li}_{1+x+\alpha}\text{Ni}_{(1-x-y+\delta)/2}\text{Mn}_{(1-x-y-\delta)/2}\text{M}_y\text{O}_2$  (where  $0 \leq x \leq 0.15$ ,  $-0.05 \leq x + \alpha \leq 0.2$ ,  $0.16 \leq y \leq 0.4$ ;-

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$0.1 \leq \delta \leq 0.1$ ; and M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn (page 46 C1), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles, wherein the primary particles have a mean particle diameter of 0.3 to 3  $\mu\text{m}$  (page 6 paragraph 0045) and the secondary particles have a mean particle diameter of 5 to 20  $\mu\text{m}$  (page 6 paragraph 0045) and a specific surface area of  $0.3 \text{ m}^2/\text{g}$  (page 5 paragraph 0039).

As to claim 2 and 17, Shiozaki et al. discloses wherein  $x \leq 0.05$  and  $x + \alpha \leq 0.05$  (page 4 paragraph 0025).

As to claim 3 and 18, Shiozaki et al. discloses that in the general formula,  $y > 0$  and M is one or more elements containing at least Co (page 4 paragraph 0020).

As to claim 4, Shiozaki et al. discloses the same composition desired by the applicant, therefore it is inherent that the lithium-containing complex oxide has an average valence of 3.3 to 4.

As to claims 5 and 20, Shiozaki et al. discloses a non-aqueous secondary battery comprising a positive electrode comprising a lithium-containing complex oxide as an active material, a negative electrode and a non-aqueous electrolyte (col. 2 lines 14-19) wherein the lithium-containing complex oxide represented by general formula  $\text{Li}_{1+x+\alpha}\text{Ni}_{(1-x-y+\delta)/2}\text{Mn}_{(1-x-y-\delta)/2}\text{M}_y\text{O}_2$  (where  $0 \leq x \leq 0.15$ ,  $-0.05 \leq x + \alpha \leq 0.2$ ,  $0 \leq y \leq 0.4$ ;  $-0.1 \leq \delta \leq 0.1$ ; and M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn (page 4 paragraph 0025), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles, wherein the secondary particles have a mean particle diameter of 5 to 20  $\mu\text{m}$  (page 6 paragraph

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0045), a lithium-containing complex oxide B having a mean particle diameter smaller than the mean particle diameter of the secondary particles of the lithium-containing complex oxide A (page 6 paragraph 0045).

As to claims 6 and 21 Shiozaki et al. discloses wherein  $x \leq 0.05$  and  $x + \alpha \leq 0.05$  (page 4 paragraph 0025).

As to claims 7 and 22, Shiozaki et al. discloses wherein the lithium-containing complex oxide B is contained in a ratio of 10% to 40% by weight with respect to a whole of the lithium-containing complex oxide A and the lithium-containing complex oxide B (page 6 paragraph 0045).

As to claim 8 and 23, Shiozaki et al. discloses wherein the mean particle diameter of lithium containing complex oxide B is not greater than  $3/5$  of that of the secondary particles of the lithium containing complex oxide A (page 6 paragraph 0045).

As to claim 9 and 24, Shiozaki et al. discloses that in the general formula,  $y > 0$  and M is one or more elements containing at least Co (page 4 paragraph 0027).

As to claim 10 and 25, Shiozaki et al. discloses wherein the lithium-containing complex oxide has as BET specific surface area of  $0.3 \text{ m}^2/\text{g}$  (page 4 paragraph 0039).

As to claim 11 and 26, Shiozaki et al. discloses that the lithium-containing complex oxide B of secondary particles formed of flocculated primary (page 15, paragraph 0132).

As to claim 12 and 28, since Shiozaki et al. discloses the same composition desired by the applicant it is inherent that the Ni, Mn and the Co of the lithium-containing complex oxide have a valence of 2, 4, and 3 respectively.

As to claim 13 and 27, Shizoali et al. discloses that the lithium-containing complex oxide B is represented by general formula  $\text{Li}_{1+a+b}\text{R}_{1-a}\text{O}_2$  (where  $0 \leq a \leq 0.05$  and  $0.05 \leq a+b \leq 0.05$ , and R is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn (page 4 paragraph 0025).

As to claim 14 and 29, Shiozaki et al. discloses a non-aqueous secondary battery comprising a positive electrode comprising a lithium-containing complex oxide as an active material, a negative electrode and a non-aqueous electrolyte (col. 2 lines 14-19) wherein the lithium-containing complex oxide represented by general formula  $\text{Li}_{1+x+\alpha}\text{Ni}_{(1-x-y+\delta)/2}\text{Mn}_{(1-x-y-\delta)/2}\text{M}_y\text{O}_2$  (where  $0 \leq x \leq 0.15$ ,  $-0.05 \leq x + \alpha \leq 0.2$ ,  $0 \leq y \leq 0.4$ ;  $-0.1 \leq \delta \leq 0.1$ ; and M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn (page 4 paragraph 0025), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles wherein the secondary particles having a mean particle diameter of 5-20 $\mu\text{m}$  are contained in a ratio of 60% to 90% by weight with respect to a whole of the complex oxide and the secondary particles having a mean particle diameter of not greater than 3/5 of the mean particle diameter of 5-20 $\mu\text{m}$  are contained in a ratio of 10% to 40% by weight with respect to the whole of the complex oxide (page 6 paragraph 0046).

As to claims 15 and 30 Shiozaki et al. discloses wherein  $x \leq 0.05$  and  $x + \alpha \leq 0.05$  (page 4 paragraph 0025).

As to claim 31-33, Shiozaki et al. discloses a non-aqueous secondary battery comprising a positive electrode comprising a lithium-containing complex oxide as an active material, a negative electrode and a non-aqueous electrolyte (pg 2 paragraph



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0001) wherein the lithium-containing complex oxide represented by general formula  $\text{LiNi}_{5/12}\text{Mn}_{5/12}\text{M}_{1/6}\text{O}_2$  (where M is at least one element selected from the group consisting of Mg, Ti, Cr, Fe, Co, Cu, Zn, Al, Ge, Zr and Sn (page 46 C1), the lithium-containing complex oxide comprising secondary particles formed of flocculated primary particles, wherein the primary particles have a mean particle diameter of 0.3 to 3 $\mu\text{m}$  (page 6 paragraph 0045) and the secondary particles have a mean particle diameter of 5 to 20 $\mu\text{m}$  (page 6 paragraph 0045) and a specific surface area of 0.3-2 $\text{m}^2/\text{g}$  (page 5 paragraph 0039). Furthermore, Shiozaki et al. discloses wherein the secondary particles having a mean particle diameter of 5-20 $\mu\text{m}$  are contained in a ratio of 60% to 90% by weight with respect to a whole of the complex oxide and the secondary particles having a mean particle diameter of not greater than 3/5 of the mean particle diameter of 5-20 $\mu\text{m}$  are contained in a ratio of 10% to 40% by weight with respect to the whole of the complex oxide (page 6 paragraph 0046).

As to claim 34-36, Shiozaki et al. discloses wherein the a composition represented by General Formula is in a vicinity of a composition represented by  $\text{LiNi}_{1/3}\text{Mn}_{1/3}\text{M}_{1/3}\text{O}_2$  (page 46 C3).

As to claims 37-42, Shiozaki et al. discloses a non-aqueous secondary battery comprising a positive electrode comprising a lithium-containing complex oxide as an active material, a negative electrode and a non-aqueous electrolyte (pg 2 paragraph 0001).

***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiozaki et al.

As to claims 43-45, Shiozaki et al. discloses wherein the positive electrode mixture contains a binder (page 19 paragraph 0169) and a density of at least  $2.25\text{g/cm}^3$  (page 19 paragraph 0171).

It would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Shiozaki et al. with a positive electrode having a density of at least  $2.9\text{g/cm}^3$  in order to obtain optimal results in absence of unexpected results.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.

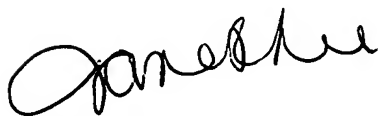
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Rhee whose telephone number is 571-272-1499. The examiner can normally be reached on M-F 9-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Jane Rhee", is positioned above the printed name and date.

Jane Rhee  
March 3, 2007